

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's preliminary amendments, filed 2/17/2005, have been fully considered and reviewed by the examiner. The examiner notes the cancellation of claims 1-80 and the addition of new claims 81-120. Claims 81-120 remain pending in the instant application.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 81-120 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 81 includes an improper Markush group "at least two gases selected from the group comprising:". Such a statement is improper because the group is infinite. The phrase should more reasonably be "at least two gases selected from the group consisting of:"

The other dependant claims do not cure the defects of the claims from which they depend.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 81, 91, 94, 97-104, 106 are rejected under 35 U.S.C. 102(b) as being anticipated by Kupfer et al., Ecologically important metallization processes for high-performance polymers, Surface and Coating Technology 112 (1999) 379-383.

Kupfer discloses a method for providing a material for use in packaging, including a plastic film subject to a plasma using a mixture of two gases selected from nitrogen, argon, and oxygen (379-380). Kupfer discloses coating the plastic film with a metallized layer to form a metallized plastic film, such as a gas barrier film (379-380).

Kupfer does not explicitly state that the oxygen transmission rate or the water vapor transmission rate as claimed. However, the Kupfer teaches each and every process step and limitation of the applicant's claims, including the pretreatment of the plastic film with gas mixture as claimed and metallizing the plastic film to provide barrier properties. Since the oxygen and water vapor transmission rates by the applicant's claimed process is simply a function of the pretreatment and plastic film, Kupfer teaches the claimed process steps, the process of Kupfer would have inherently produce the claimed transmission rates unless essential process steps and/or limitations are missing from the applicant's claims.

Claim 91: Kupfer discloses nitrogen and oxygen mixture for plasma treatment (381).

Claim 94: Kupfer discloses a argon and oxygen gas mixture for plasma treatment (381).

Claims 97-103: Kupfer does not explicitly state that the oxygen transmission rate or the water vapor transmission rate as claimed. However, the Kupfer teaches each and every process step and limitation of the applicant's claims, including the pretreatment of the plastic film with gas mixture as claimed and metallizing the plastic film to provide barrier properties. Since the oxygen and water vapor transmission rates by the applicant's claimed process is simply a function of the pretreatment and plastic film, Kupfer teaches the claimed process steps, the process of Kupfer would have inherently produce the claimed transmission rates unless essential process steps and/or limitations are missing from the applicant's claims.

Claims 104 and 106: Kupfer discloses metallizing and plasma treating on one side (experimental section).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 81, 82, 86, 87, 90-104, 106, 108-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6231939 by Shaw et al. hereafter Shaw in view of Kupfer.

Shaw discloses a method for providing a material for use in food packaging, including a metallized propylene, nylon or polyester film (Column 2, lines 45-50). Shaw disclose barrier properties are includes by providing the plastic layer with multiple treatments (Column 3, lines 25-38).

Shaw fails to disclose pretreating the plastic film with a plasma comprising two gases as claimed; however, Kupfer is applied here as applied in paragraph 5 above. Additionally, Kupfer discloses the plasma pretreatment of the film provides increased metal film adhesion (page 382). Therefore, taking the references collectively, it would have been obvious at the time of the invention to ahve provided the plasma pretreatment of Kupfer in the process of Shaw to reap the benefits of increased metallized film adhesion.

Shaw in view of Kupfer does not explicitly state that the oxygen transmission rate or the water vapor transmission rate as claimed. However, the Shaw in view of Kupfer teaches each and every process step and limitation of the applicant's claims, including the pretreatment of the same plastic material film with gas mixture as claimed and metallizing the plastic film to provide barrier properties. Since the oxygen and water

vapor transmission rates by the applicant's claimed process is simply a function of the pretreatment and plastic film, Kupfer teaches the claimed process steps, the process of Kupfer would have inherently produce the claimed transmission rates unless essential process steps and/or limitations are missing from the applicant's claims.

Additionally, Shaw discloses the gas barrier properties of the metallized film are result effective variable and therefore it would have been obvious to one of ordinary skill in the art to have adjusted the number of depositions of metal on the surface of the plastic film to provide the desired gas barrier properties.

Claim 91-96: Kupfer discloses providing a plasma treatment of a mixture of gases from oxygen, argon, and nitrogen (380), and therefore reasonable suggests to one of ordinary skill in the art to provide any combination of gases with a reasonable expectation of success. The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375. As for the requirement of the relative quantities of the plasma gases, the examiner notes the plasma is utilized in Kupfer for etching and it is the examiners position that adjusting the composition of the plasma mixture is well within the skill of one ordinary in the art to provide the appropriate etching for the film.

Claim 82: Shaw discloses aluminum metal (column 3, lines 3-5).

Claims 97-103: Shaw in view of Kupfer does not explicitly state that the oxygen transmission rate or the water vapor transmission rate as claimed. However, the Shaw in view of Kupfer teaches each and every process step and limitation of the applicant's

claims, including the pretreatment of the same plastic material film with gas mixture as claimed and metallizing the plastic film to provide barrier properties. Since the oxygen and water vapor transmission rates by the applicant's claimed process is simply a function of the pretreatment and plastic film, Kupfer teaches the claimed process steps, the process of Kupfer would have inherently produce the claimed transmission rates unless essential process steps and/or limitations are missing from the applicant's claims.

Additionally, Shaw discloses the gas barrier properties of the metallized film are result effective variable and therefore it would have been obvious to one of ordinary skill in the art to have adjusted the number of depositions of metal on the surface of the plastic film to provide the desired gas barrier properties.

Claims 104, 106, and 111: Kupfer discloses metallizing and plasma treating on one side (experimental section).

Claims 108-110, 112-114: Shaw explicitly discloses providing multiple metallized films and the combination of Shaw in view of Kupfer reasonable teaches providing multiple plasma treatments and metallized films on the plastic film to provide the appropriate barrier properties.

9. Claims 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw in view of Kupfer and further in view of US Patent 3916048 by Walles.

Shaw in view of Kupfer discloses all that is discussed above in section 8, but fails to explicitly disclose the metal for the metallization of the film. However, Walles,

teachings of metallized plastic films for packaging discloses known and suitable metals include aluminum, silver, gold, and tin, among others (Column 2, lines 64-68), and therefore discloses silver, gold, and tin are known equivalents and/or substitutes for the metallization of plastic film. Therefore, the claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

10. Claims 88-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw in view of Kupfer and further in view of US Patent 6346318 by Panchyshyn, hereafter Panchyshyn.

Claims 88-89: Shaw in view of Kupfer discloses all that is discussed above in section 8, but fails to explicitly disclose polyethylene and PVC plastic films. However, Panchyshyn, teachings of metallized plastic films for packaging discloses known and suitable plastic substrates include polyethylene, PVC, polyester, polypropylene, among others (Column 2, lines 64-68), and therefore discloses polyethylene, PVC, polyester, polypropylene are known equivalents and/or substitutes for the metallization of plastic film. Therefore, the claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

11. Claims 105, 107, 115-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw in view of Kupfer and further in view of US Patent 5106670 by Wyslotsky et al., hereafter Wyslotsky

Claims 105, 107, 115-120: Shaw in view of Kupfer discloses all that is discussed above in section 8, except the references fail to disclose plasma and metallization on both sides of the substrate. However, Wyslotsky discloses metallization of plastic film on one or both of the plastic surfaces (abstract). Therefore Wyslotsky discloses that metallization on both surfaces of the plastic is known and suitable in the art and therefore, it would have been obvious to one of ordinary skill in the art to have provided plasma and metallization processes as claimed by applicant because Wyslotsky discloses that such is known in the metallization art. Therefore, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d.

#### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TUROCY whose telephone number is (571)272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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